

3.1 About business Lean manufacturing

Listening for detail

1:33 Listen to Andrea Livingstone giving a lecture on work organization and complete the notes below.

The organization of work in the UK

The domestic system

In this system people worked at (1) home
The whole family made items and sold them at
(2) the market.
People worked part-time and production was slow.

The workshop system

Very similar to domestic system.
People were organized by a subcontractor - similar
to a (3) manager.
Families used the subcontractor's materials.
(4) the subcontractor kept all the profits.

The factory system

Production moved into factories.
First factory built in (5) _____ by Richard
Arkwright.
Production was much (6) more quicker but working
conditions were bad.

The post-factory system

Very similar to before.
(7) technology is much more advanced.
Maybe humans not needed in the future?
No - will need humans to (8) repair and
engineers to mend the machines.

Reading for gist

Now read the text about a system of work organization used in Japan, and write the headings above each section.

JIT The result Beyond the Japanese car industry Lean manufacturing
Chaos TPS The employees

Reading for detail

Read the text again and mark the sentences *T* (true) or *F* (false).

- The Toyota Production System started 100 years ago in Japan.
- Toyota's machines are multi-purpose. They are able to produce more than one part.
- Lean manufacturing is another name for the TPS.
- Toyota's employees are involved in the production process.
- Just-in-time means that parts are ordered once a month.
- The company is important to Japanese employees.
- The TPS means that the environment the employees work in is less dangerous.
- The TPS is successful all over the world.

Match the terms relating to TPS on the left with the definitions on the right.

- | | | |
|----------------------|---|--|
| 1 Kaizen | c | a) in this process stock is only ordered when it is needed – not before. |
| 2 Just-in-time | a | b) a system that aims to produce more, using less. The removal of waste (waste = anything that does not add to the final product). |
| 3 Lean manufacturing | b | c) continually making small improvements which lead to greater effectiveness and higher quality. |

Listening for gist

1:34 Listen to Eric Novak, a manager, talking about when he tried to introduce TPS in his company.

- What went wrong?
- Why didn't it work?

Internet research

Search for the keywords *lean manufacturing*, *advantages or lean manufacturing*, *disadvantages* to find out more about the pros and cons of this system. Tell a partner what you read.

Toyota PRODUCTION SYSTEM

Beyond car and
By the 1970s, car production in Europe and America was huge. Demand was high and cars were mass-produced on an enormous scale. But when demand changed, and mass production methods didn't, thousands of unsold vehicles sat outside the factories waiting to be bought. In Japan however, things were different.

TPS
The Toyota Production System (TPS) was developed in the middle of the last century by a Toyota manager named Taiichi Ohno. It created the most efficient car production system in the world. Instead of using machines that built only one specific part, Toyota designed machines that could produce many different parts. This made Toyota more flexible and able to react quickly to customers' changing needs.

Lean M.
By the 1990s, the term Lean Manufacturing was being used to describe TPS. Lean manufacturing combines the best elements of craftwork and mass production. It uses less labour, less machinery, less space and less time. The aim of lean manufacturing is to eliminate all defects. If something goes wrong a worker can stop the whole production line and deal with the problem immediately. If the worker didn't make this decision, production could carry on producing faulty or incorrect parts.

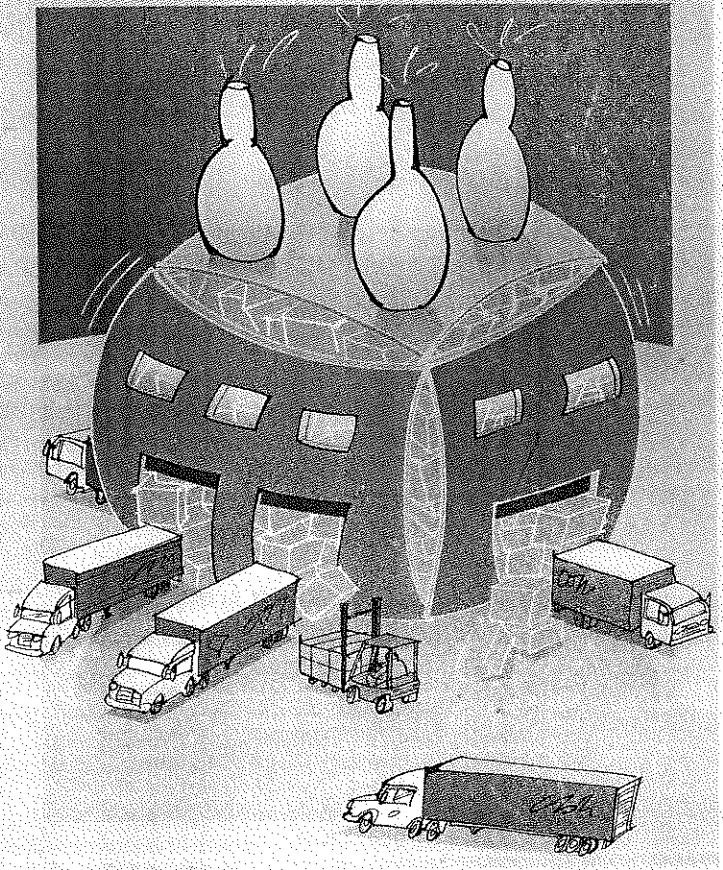
JIT
At Toyota, the just-in-time system makes stores or warehouses unnecessary because parts are only produced or ordered when they are needed. This means that costs are cut, and turnover is increased.

The employees
Toyota has more success with lean manufacturing than other companies because all their employees have a clear understanding of the objective and are totally committed to *kaizen*, the Japanese term for continuous improvement. Importantly, Toyota employees identify strongly with their company.

The results
When implemented successfully, the TPS is a systematic way to satisfy customer needs and create meaningful work for every member of an organization.

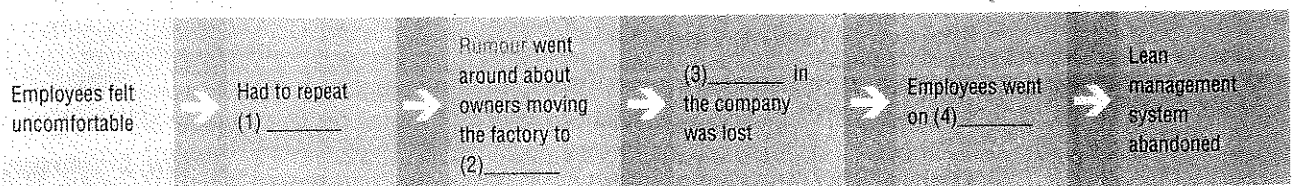
The results of TPS are superior products and service quality, short lead times, low costs and a safe (physically, professionally and emotionally) working environment for the employees.

Chaos
Although lean manufacturing is spreading from the car factory to other industries, manufacturers around the world who try to implement the TPS are not always successful. One of the reasons for this is that companies which have been running mass production systems sometimes find it difficult to adjust. Additionally, in the West, where employees think of themselves before the company, it is more difficult for employees to adapt to the TPS.



Listening for detail

G Listen to the manager again and fill in the flow chart.



Discussion

7 In small groups discuss the questions about lean manufacturing.

- 1 What are the advantages and disadvantages of lean manufacturing?
- 2 Can you think of any companies that lean manufacturing would work very well/badly for?
- 3 What effects would lean manufacturing have on a company? Think about employees, customers, equipment, premises.

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3.2 Vocabulary Trends and planning

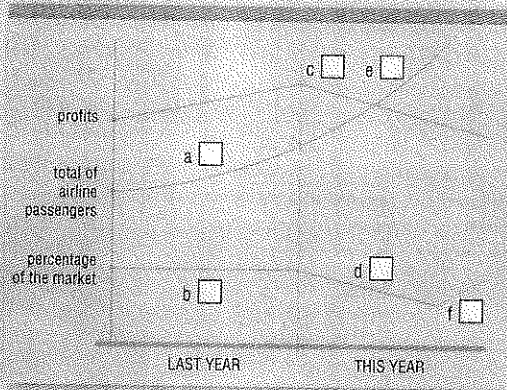
Discussion

1 Work with a partner. What do you know about changes in the aviation industry? Are things improving for a) small airlines, b) large airlines, c) passengers, d) the environment and e) airline staff?

Reading for detail

2 Read a report about the recent performance of ScotAir, a large passenger airline. The words in **bold** describe different parts of the graph. Write the numbers in the correct place on the graph.

ScotAir's recent performance and trends in the passenger air travel industry



NEW LOST-COST SUBSIDIARY

Last year was a good year for the passenger aviation industry: the overall number of passengers (1) **went up**, and the trend continued into this year. We expect passenger numbers to continue to (2) **increase** for some time. However, our profits began to (3) **fall** at the beginning of the year. The reason for this was the arrival of two new low-cost competitors. The last few months have not been easy, but we hope that this difficult phase is now coming to an end. As soon as we get the green light, we plan to buy three more planes to add to our fleet. With these planes and the resources already available to us – crew, our existing planes, airport slots, etc. – we intend to set up a new low-cost subsidiary. This will be a milestone in our company's history. For many years, our percentage of the market (4) **remained steady**, but it (5) **went down** for the first time ever at the beginning of the year. However, with our new subsidiary we expect it to (6) **grow** again. We've set ourselves a deadline: to become the market leader once again by the end of next year.

Describing trends

1 Find four pairs of opposites in the box below. Then write them in the table in the correct column.

fall decrease go down
grow increase go up
rise shrink

↗	↘

2 What are the past simple forms of the verbs in 3?

Project planning terms

1 Match a word on the left with the correct definition on the right.

- | | |
|------------------------|---|
| 1 resources c | a) a particular period of time during the development of something |
| 2 milestone e | b) a specific time or date by which you have to do something |
| 3 green light d | c) something such as money, workers, or equipment that can be used to help an institution or business |
| 4 deadline b | d) the official approval to go ahead with something |
| 5 phase a | e) an event or achievement that marks an important stage in a project |

Listening for gist

1:35 Listen to Ms Bloom, a research scientist, in a meeting with an airline company. What is the problem they discuss, and what is Ms Bloom's solution?

REVIEW 3